AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) An albumin fusion protein comprising a member selected from the group consisting of:

(a) an interferon alpha protein and albumin, wherein albumin comprises the amino acid sequence of SEQ ID NO:18;

(b) an interferon alpha protein and a fragment of the amino acid sequence of SEQ ID NO:18, wherein said fragment has the ability to prolong the ~~shelf-life~~ serum half-life of the interferon alpha protein compared to the ~~shelf-life~~ serum half-life of the interferon alpha protein in an unfused state;

(c) an interferon alpha protein and a fragment of the amino acid sequence of SEQ ID NO:18, wherein said fragment has the ability to prolong the ~~shelf-life~~ serum half-life of the interferon alpha protein compared to the ~~shelf-life~~ serum half-life of the interferon alpha protein in an unfused state, and further wherein the fragment comprises amino acid residues 1-387 of SEQ ID NO:18;

(d) a fragment of an interferon alpha protein and albumin comprising the amino acid sequence of SEQ ID NO:18, wherein said fragment has a biological activity of the interferon alpha protein;

(e) a fragment of an interferon alpha protein, wherein said fragment of interferon alpha has a biological activity of the interferon alpha protein, and a fragment of the amino acid sequence of SEQ ID NO:18, wherein said fragment of the amino acid

sequence of SEQ ID NO:18 has the ability to prolong the serum half-life of the interferon alpha protein compared to the serum half-life of the interferon alpha protein in an unfused state;

([[e]] f) an interferon alpha protein, or fragment thereof, and albumin, or fragment thereof, of (a) to ([[d]] e), wherein the interferon alpha protein, or fragment thereof, is fused to the N-terminus of albumin, or the N-terminus of the fragment of albumin;

([[f]] g) an interferon alpha protein, or fragment thereof, and albumin, or fragment thereof, of (a) to ([[d]] e), wherein the interferon alpha protein, or fragment thereof, is fused to the C-terminus of albumin, or the C-terminus of the fragment of albumin;

([[g]] h) an interferon alpha protein, or fragment thereof, and albumin, or fragment thereof, of (a) to ([[d]] e), wherein the interferon alpha protein, or fragment thereof, is fused to the N- terminus and C-terminus of albumin, or the N-terminus and the C-terminus of the fragment of albumin;

([[h]] i) an interferon alpha protein, or fragment thereof, and albumin, or fragment thereof, of (a) to ([[d]] e), which comprises a first interferon alpha protein, or fragment thereof, and a second interferon alpha protein, or fragment thereof, wherein said first interferon alpha protein, or fragment thereof, is different from said second interferon alpha protein, or fragment thereof;

([[i]] j) an interferon alpha protein, or fragment thereof, and albumin, or fragment thereof, of (a) to ([[h]] i), wherein the interferon alpha protein, or fragment thereof, is separated from the albumin or the fragment of albumin by a linker; and

([[j]] k) an interferon alpha protein, or fragment thereof, and albumin, or fragment thereof, of (a) to ([[i]] j), wherein the albumin fusion protein has the following formula:

R1-L-R2; R2-L-R1; or R1-L-R2-L-R1, and further wherein R1 is interferon alpha protein, or fragment thereof, L is a peptide linker, and R2 is albumin comprising the amino acid sequence of SEQ ID NO: 18 or a fragment of albumin.

2. (Currently Amended) The albumin fusion protein of claim 1, wherein the ~~shelf-life~~ serum half-life of the albumin fusion protein is greater than the ~~shelf-life~~ serum half-life of the interferon alpha protein, or fragment thereof, in an unfused state.

3. (Previously presented) The albumin fusion protein of claim 1, wherein the in vitro biological activity of the interferon alpha protein, or fragment thereof, fused to albumin, or fragment thereof, is greater than the in vitro biological activity of the interferon alpha protein, or fragment thereof, in an unfused state.

4. (Previously presented) The albumin fusion protein of claim 1, wherein the in vivo biological activity of the interferon alpha protein, or fragment thereof, fused to albumin, or fragment thereof, is greater than the in vivo biological activity of the interferon alpha protein, or fragment thereof, in an unfused state.

5. (Previously presented) An albumin fusion protein comprising an interferon alpha protein or fragment thereof, inserted into an albumin, or fragment thereof, comprising the amino acid sequence of SEQ ID NO:18 or fragment thereof.

6. (Previously presented) An albumin fusion protein comprising an interferon alpha protein or fragment thereof, inserted into an albumin, or fragment thereof comprising an amino acid sequence selected from the group consisting of:

(a) amino acid residues 54 to 61 of SEQ ID NO:18;

(b) amino acid residues 76 to 89 of SEQ ID NO:18;

(c) amino acid residues 92 to I00 of SEQ ID NO:18;

(d) amino acid residues 170 to 176 of SEQ ID NO:18;

(e) amino acid residues 247 to 252 of SEQ ID NO:18;

(f) amino acid residues 266 to 277 of SEQ ID NO:18;

(g) amino acid residues 280 to 288 of SEQ ID NO:18;

(h) amino acid residues 362 to 368 of SEQ ID NO:18;

(i) amino acid residues 439 to 447 of SEQ ID NO:18;

(j) amino acid residues 462 to 475 of SEQ ID NO:18;

(k) amino acid residues 478 to 486 of SEQ ID NO:18; and

(l) amino acid residues 560 to 566 of SEQ ID NO:18.

7. (Currently Amended) The albumin fusion protein of claim 5, wherein said albumin fusion protein comprises a fragment of albumin sufficient to prolong the ~~shelf-life~~ serum half-life of the interferon alpha protein or fragment thereof, as compared to the ~~shelf-life~~ serum half-life of the interferon alpha protein or fragment thereof, in an unfused state.

8. (Currently Amended) The albumin fusion protein of claim 6, wherein said albumin fusion protein comprises a fragment of albumin sufficient to prolong the ~~shelf-~~

~~life~~ serum half-life of the interferon alpha protein or fragment thereof, as compared to the ~~shelf-life~~ serum half-life of the interferon alpha protein or fragment thereof, in an unfused state.

9. (Previously presented) The albumin fusion protein of claim 5, wherein said albumin fusion protein comprises a fragment of albumin sufficient to prolong the in vitro biological activity of the interferon alpha protein or fragment thereof, fused to albumin as compared to the in vitro biological activity of the interferon alpha protein or fragment thereof, in an unfused state.

10. (Previously presented) The albumin fusion protein of claim 6, wherein said albumin fusion protein comprises a fragment of albumin sufficient to prolong the in vitro biological activity of the interferon alpha protein or fragment thereof, fused to albumin as compared to the in vitro biological activity of the interferon alpha protein or fragment thereof, in an unfused state.

11. (Previously presented) The albumin fusion protein of claim 5 wherein said albumin fusion protein comprises a fragment of albumin sufficient to prolong the in vivo biological activity of the interferon alpha protein or fragment thereof, fused to albumin compared to the in vivo biological activity of the interferon alpha protein or fragment thereof, in an unfused state.

12. (Previously presented) The albumin fusion protein of claim 6 wherein said albumin fusion protein comprises a fragment of albumin sufficient to prolong the in vivo biological activity of the interferon alpha protein or fragment thereof, fused to albumin

compared to the in vivo biological activity of the interferon alpha protein or fragment thereof, in an unfused state.

13. (Original) The albumin fusion protein of any one of claims 1-12, which is nonglycosylated.

14. (Original) The albumin fusion protein of any one of claims 1-12, which is expressed in yeast.

15. (Original) The albumin fusion protein of claim 14, wherein the yeast is glycosylation deficient.

16. (Original) The albumin fusion protein of claim 14 wherein the yeast is glycosylation and protease deficient.

17. (Original) The albumin fusion protein of any one of claims 1-12, which is expressed by a mammalian cell.

18. (Original) The albumin fusion protein of any one of claims 1-12, wherein the albumin fusion protein is expressed by a mammalian cell in culture.

19. (Original) The albumin fusion protein of any one of claims 1-12, wherein the albumin fusion protein further comprises a secretion leader sequence.

20. (Original) A composition comprising the albumin fusion protein of any one of claims 1-12 and a pharmaceutically acceptable carrier.

21. (Original) A kit comprising the composition of claim 20.

22. (Withdrawn) A method of treating a disease or disorder in a patient, comprising the step of administering the albumin fusion protein of any one of claims 1-12.

23. (Withdrawn-Currently Amended) The method of claim 22, wherein the disease or disorder is cancer, human papilloma virus, fibromyalgia, Sjogren's syndrome, hairy cell leukemia, chronic myelogenous leukemia, AIDS-related Kaposi's sarcoma, malignant melanoma, non-Hodgkin's lymphoma, external condylomata acuminata, HIV infection, small cell lung cancer, hematological malignancies, herpes simplex virus infections, multiple sclerosis, viral hemorrhagic fevers, solid tumors, renal cancer, bone marrow disorders, bone disorders, bladder cancer, multiple myeloma, type I diabetes mellitus, viral infections, cutaneous T-cell lymphoma, cervical dysplasia, chronic fatigue syndrome, or renal cancer ~~comprises indication:Y~~.

24. (Withdrawn-Currently Amended) A method of treating a patient with a disease or disorder that is modulated by an interferon alpha protein ~~Therapeutic protein:X~~, or fragment ~~or variant~~ thereof, comprising the step of administering an effective amount of the albumin fusion protein of any one of claims 1-12.

25. (Withdrawn-Currently Amended) The method of claim 24, wherein the disease or disorder is cancer, human papilloma virus, fibromyalgia, Sjogren's syndrome, hairy cell leukemia, chronic myelogenous leukemia, AIDS-related Kaposi's sarcoma, malignant melanoma, non-Hodgkin's lymphoma, external condylomata acuminata, HIV infection, small cell lung cancer, hematological malignancies, herpes simplex virus infections, multiple sclerosis, viral hemorrhagic fevers, solid tumors, renal cancer, bone

marrow disorders, bone disorders, bladder cancer, multiple myeloma, type I diabetes mellitus, viral infections, cutaneous T-cell lymphoma, cervical dysplasia, chronic fatigue syndrome, or renal cancer ~~indication:Y~~.

26. (Withdrawn-Currently Amended) A method of extending the serum half-life ~~shelf life~~ of an interferon alpha protein, or fragment thereof, comprising the step of fusing the interferon alpha protein, or fragment thereof, to albumin, or fragment thereof, sufficient to extend the serum half-life ~~shelf life~~ of the interferon alpha protein, or fragment thereof, compared to the serum half-life ~~shelf life~~ of the interferon alpha protein, or fragment thereof, in an unfused state.

27. (Withdrawn) A nucleic acid molecule comprising a polynucleotide sequence encoding the albumin fusion protein of any one of claims 1-12.

28. (Withdrawn) A vector comprising the nucleic acid molecule of claim 27.

29. (Withdrawn-Currently Amended) A host cell comprising the nucleic acid molecule of claim 27 ~~claim 28~~.

30-60. (Canceled)

61. (New) The method of claim 22, wherein the disease or disorder is hepatitis.

62. (New) The method of claim 61, wherein the hepatitis is hepatitis B.

63. (New) The method of claim 61, wherein the hepatitis is hepatitis C.

64. (New) The method of claim 61, wherein the hepatitis is hepatitis D.

65. (New) The method of claim 24, wherein the disease or disorder is hepatitis.

66. (New) The method of claim 64, wherein the hepatitis is hepatitis B.

67. (New) The method of claim 64, wherein the hepatitis is hepatitis C.

68. (New) The method of claim 64, wherein the hepatitis is hepatitis D.